

Appl. No. 10/038,916
Amdmt dated January 16, 2007
Reply to Office Action of November 16, 2006

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REMARKS/ARGUMENTS

Claim Objections

In paragraph 5 of the detailed action, the Examiner has objected to the missing word "pilot" after "based on the scattered". Claim 37 has been amended to include this.

Claim Rejections – 35 U.S.C. Section 112

In paragraph 7 of the detailed action, the Examiner has argued that "the combined pilot symbols" in lines 2 to 3 of claim 37 have insufficient antecedent basis. To address this, the term "combined" has been deleted.

The Examiner is respectfully requested to withdraw the 35 U.S.C. rejection.

Claim Rejections – 35 U.S.C. 103

In paragraph 9 of the detailed action, the Examiner has rejected claims 1 and 11 under 35 U.S.C. 103(a) as being unpatentable over ten Brink (US Patent 6,611,513) in view of Stein (USP 6,175,590) and further in view of Balachandran et al (USP 6,215,827). To begin, it is still not clear what the relevance of the ten Brink reference is. The reference relates to iterative de-mapping of a received signal. There is no re-encoding of a decoded output sequence in the matter claimed (conceded by the Examiner on page 4) and there is no feeding back of any channel quality, conceded by the Examiner on page 5 of the Office Action.

Missing Claim Elements

Turning now to Stein, Stein teaches the use of a set of correlation results, one per data rate, to determine the most likely rate at which data was sent. There is no suggestion anywhere in Stein that this is in any way indicative of the quality of the signal. The "best correlation" may in fact still pertain to a signal with very poor quality. In fact, the reference teaches away from the use of the correlation result as a quality metric. Having decided which rate was used, the receiver does not decide to keep or discard the result on the basis of any "quality" associated with the

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correlation result. Rather, other metrics, such as CRC and Yamamoto are used to determine the quality of the result, and to decide whether to keep or discard the result.

More specifically, referring to Column 2, lines 59 to 67:

“In the typical situation, only the data rate corresponding to the highest normalized correlation metric is considered. This frame can be accepted or erased, depending on the CRC check and/or the Yamamoto quality metric. In some applications, CRC encoding may not be performed on all data rates. When this occurs, the Yamamoto quality metric can be used in place of the CRC check, other metrics can be used, or the data rate determination process can be made dependent only on the normalized correlation metrics.”

Please also refer to see column 9, lines 45 to 61 which read:

“In the alternative embodiment of the data rate determination process, rate selector 250 can also utilizes [sic] a quality indicator to assist in making the determination of the received data rate...”

It is respectfully submitted that this passage makes it clear that the correlations *per se* are not considered quality metrics.

Thus, if one were to combine Stein with Balachandran et al (assuming there would be any motivation for such a combination which Applicant does not concede), it seems that the person skilled in the art would feed back the Yamamoto metric or CRC of Stein, since these are both suggested as candidates for quality metrics (although not for feedback to a transmitter). However, combining Stein with Balachandran et al does not yield the claimed invention because of the missing step of using the correlation result as a quality metric.

Motivation to Combine

In terms of motivation to combine Stein with Balachandran, it is clearly an objective of Stein to minimize overhead. See col. 6, lines 47-54 where the reason for not signalling the rate

Appl. No. 10/038,916
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used, thereby requiring blind rate detection in the receiver, is clearly established as avoiding the requirement of additional overhead bits. Thus, the additional overhead required by the Balachandran approach of feeding back quality metrics would be something to be avoided in the system of Stein.

Furthermore, to satisfy the motivation to combine, there needs to be established a motivation to combine two references in the manner claimed. It is not enough to establish some motivation to combine two references generally, and then start picking individual elements from the two references.

Thus, it is respectfully submitted the Examiner has failed to satisfy two of the criteria for establishing a *prima facie* case of obviousness. The first criteria that has not been satisfied is that the references teach all of the limitations. None of the references cited by the Examiner teach the use of correlations computed in the manner claimed for use as a quality metric. Secondly, the Examiner has failed to satisfy the burden of showing motivation to combine. As detailed above, Stein teaches away from using the correlation metric as a quality metric (because Stein suggests using CRC or Yamamoto metrics instead) and further teaches away from sending any quality metric back to the transmitter as evidenced by the efforts made to avoid increasing overhead by requiring blind rate detection.

On this basis the Examiner is respectfully requested to withdraw the rejection of claims 1 and 11 under 35 U.S.C. 103(a).

In paragraph 10, the Examiner has rejected claims 2, 3, 12 and 13 on the basis of the same references and further in view of Jones et al. These claims should be patentable at least for the same reasons discussed above pertaining to claims 11 and 11.

In paragraph 12, the Examiner has rejected claims 4, 7, 14 and 36 under 35 U.S.C. 103(a) as being unpatentable over ten Brink (US patent 6,611,513) in view of Stein (USP 6,175,590). Claim 4 has been amended to include the feeding back of the channel quality indicator to a transmitter. With this amendment, the arguments presented above pertaining to claims 1 and 11 apply to claim 4 as well. Similar amendments have been made to claim 7. Claim 14 already

Appl. No. 10/038,916
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includes this step of transmitting the channel quality information back to the transmitter and as such the arguments presented above pertaining to claims 1 and 11 apply to this claim. The Examiner has lumped claims 4 and 36 together on page 7 of the detailed action. However, these claims are completely different and it is not readily apparent what the basis for rejecting claim 36 is. Claim 36 was allowed in the Office Action dated June 10, 2005, and referring all the way back to the Office Action dated September 9, 2005, the Examiner has not referred to any of the features in this claim in any of his rejections.

In paragraph 13 of the detailed action, the Examiner has rejected claims 5, 6, 15 and 16 under 35 U.S.C. 103(a) as being unpatentable over Brink (USP 6,611,513) in view of Stein (USP 6,175,590) and further in view of Jones et al (USP 6,215,813). The arguments presented above pertaining to claims 1 and 11 apply equally well to these claims.

In paragraph 14, the Examiner has rejected claims 8 to 10 under 35 U.S.C. 103(a) as being unpatentable over Brink (USP 6,611,513) in view of Stein (USP 6,175,590), and further in view of Thomas (US Pub. 2002/0051498). With the above discussed amendments to claim 7, the arguments presented earlier respecting claims 1 and 11 apply to these claims as well.

The Examiner is respectfully requested to withdraw all remaining 35 U.S.C. 103 rejections of the claims.

Claim Rejections – 35 U.S.C. 102

In paragraph 15 of the detailed action the Examiner has maintained his rejection of claims 40 and 41 as being anticipated by Thomas et al. The Examiner has not responded to Applicant's arguments presented in the previous Office Action. The Examiner has referred to paragraph 91 of Thomas et al with all due respect, this simply has nothing to do whatsoever with the subject matter of claim 40 or 41. Please refer to the discussion in the response to the previous Office Action.

The Examiner is respectfully requested to withdraw the 35 U.S.C. 102 rejection of claims 40 and 41.


Appl. No. 10/038,916
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In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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